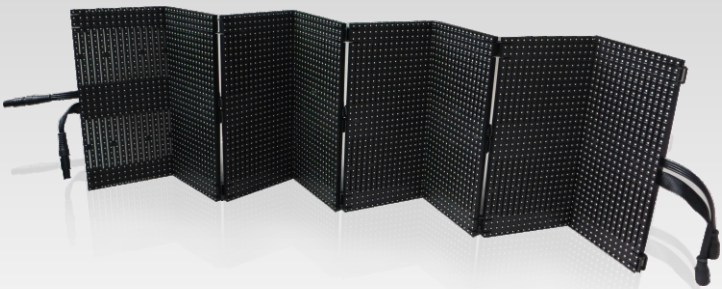

Rubik Series

Foldable LED Display

User Manual

Specification

CE FC RoHS

Model No	Rubik 6	Rubik 10
Pixel pitch	6.64mm	10mm
Density	22680 Dot/m²	10000 Dot/m²
Pixel Configuration	RGB 3-IN-1 SMD	
Brightness	2850 nit	2650 nit
View distance	4m	7m
Transparency	5%	17%
Max.Power Consumption	500W/m²	185W/m²
Average.power Consumption	167w/m²	65w/m²
Module size W=width H=height T=thickness	W:425mm H:1700mm T:25mm	W:320mm H:1280mm T:25mm
Weight	12Kg/sq.m	11.2Kg/sq.m
Work Voltage	DC 24V	
Brightness level	16 levels	
Bit depth per color	16 bit	
Bit depth per pixel	48 bit	
Visual Angle	Horizontal:120° Vertical:120°	
Date Refresh Rate	⩾7000Hz	
Display mode	1280X1024	
Drive mode	Constant current	
Signal type	AV,S-Video,VGA,CVBS,HDMI,DVI	
Contol Distance	HSYV; <100m	
Body structure	Plastic , Metal	
IP	Ip54	
Ambient Temperature	-20 ~ +50 °C	
Relative humidity	10% ~ 90%	
Power system	Power-600, Power-1200 Power jacket	
Installation	Hang	
safety certificate	CE FCC ROHS	

Dimensions

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All dimensions are in millimeters:

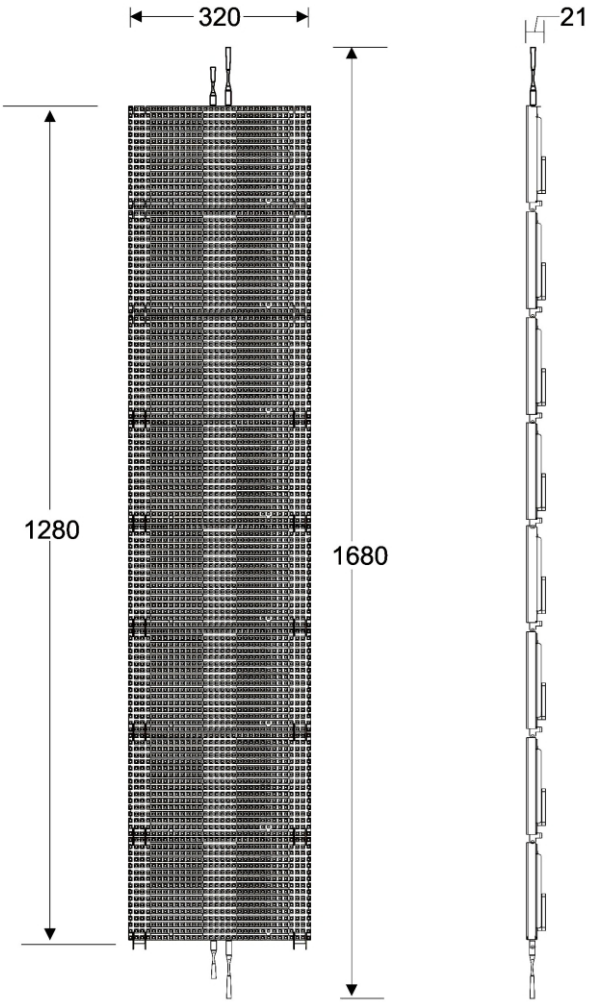

Figure-1

Information subject to change without notice. Manufacturer disclaims liability for any injury, damage, direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of,inability to use or reliance on the information contained in this manual.

Safety Information

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Warnings! Read the safety precautions in this section before installing, powering, operating and servicing this product. The following symbols are used to identify important safety information on the product.

WARNING! Safety hazard. Risk of severe injury or death.

WARNING! Refer to manual before installing, powering or servicing.

WARNING! Hazardous voltage. Risk of lethal or severe electric shock.

WARNING! Hot surface. Do not touch.

WARNING! Fire hazard.

WARNING! Emission hazardous to eyesight.

This product is for professional use only. It is not for household use.

This product presents risks of severe injury or death due to fire hazards, electric shock and falls.

Read this manual before installing, powering or servicing this product, follow the safety precautions listed below and observe all warnings in this manual and printed on the product.

If you have questions about how to operate the panel safely, please contact your local dealer.

PROTECTION FROM ELECTRIC SHOCK

- Connect the product to AC mains power within the range 90 - 260 V nominal at 50 or 60 Hz, Rubik panels only can connect to Output cable tail of PDC-101, can't connect to Local AC Power; and Power/signal cable distributor only can connect to Power systems DC24V outlet.
- Disconnect the entire installation from power before carrying out any installation or maintenance.
- Always ground (earth) the product electrically.
- Disconnect the product from power when not in use.
- Use only a source of power that complies with local building and electrical codes and has both overloads and ground-fault (earth-fault) protection.
- Connect the Header to power using only the cables supplied by manufacturer for this product. Protect power cables from water and rain.
- Connect no more than 2 powers (2400W) in total to one power socket outlets.
- Before using the product, check that all power distribution equipment and cables are in
- perfect condition and rated for the current requirements of all connected devices.
- Both end cables of Rubik LED panels are unable to bear large pulling force, ensure handle Rubik Panel with Care.

TECTION FROM FIRE

- Do not stick filters, masks or other materials directly onto LED modules.
- Do not modify the product in any way not described in this manual.
- Install only genuine Huasun parts in or on the product unless an alternative is described in this manual.
- Do not operate the product if the ambient temperature (T) exceeds 40°C (104°F)

PROTECTION FROM INJURY

Ensure that any structure used for support as well as all fastening and connecting hardware can hold at least 10 times the weight of all supported devices and equipment.
Check that all connection and rigging hardware are securely fastened.
Do not look at lit LEDs from a distance of less than 40cm without suitable protective eyewear.
Do not view lit LEDs with optical instruments that may concentrate the light output.
Ensure at least 30cm distance from LED panel to other things.

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Introduction

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This Installation and Safety Manual explains how to install, configure and maintain Rubik series foldable led display. The Safety section contains important information about safety precautions. The installation sect ion contains details of how to physically install panels and cables, and how to connect to control systems and video sources.

For information about installing and using the software, please refer to attached electrical part user manual.

Warnings! Read the safety precautions one the first two pages before installing this product.

Unpacking

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Thank you for selecting Rubik Series Foldable LED display. Its features:

1. New serial of modular Flexible LED-based graphic and video display
2. Good flexibility, can be curled, expand, both positive and negative folding combinations assembled into a variety of sizes and shapes, suitable for making shaped LED display, easy to use.
3. Each side of module can be easily combined together into large area LED display, easy to install and uninstall. Flexible and foldable, any irregular-shaped LED display is available. Easy to set up and take apart large quantity LED display.
4. Small volume, light weight, less than 25mm thick, convenient to transport and install
5. Using SMD 3in1 as a light pixel, long life, low power consumption
6. With light, transparent, flat features, beautiful appearance.
7. Simple in use
8. Rich RGB color
9. Color resolution of 16 bits per color;
10. A refresh rate of more than 7000Hz, vivid and lifelike image.

Packing List

1. 32pcs Panels, module size is 0.32m x 1.28m (According to customers' order needs)
2. Power-1200 power supply 2sets
3. Data Processor 4pcs
4. HC-103D sending card 1pc (without sending controller if work with LED version software)
5. Header 4pcs
6. Header hooks 8pcs
7. LED Panels Hooks 32pcs
8. Header hook plate 8pcs
9. M8 * 30 Black-dyeing bolt 8 pcs, M8 Black nut 8 pcs, ¢ 8 spring washers 8 pcs, ¢ 4 flat washers 8pcs
10. DC power cable 4 pcs
11. Ethernet cable 10m 1PC (according to the specific order)
12. User manual and software install manual
13. 1.5m Power cable to cascade with two power Power system in series

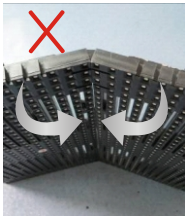
Using for the first time

1.Carefully review “Safety Information” on page 2.
2.Check that the local AC power voltage is within the ranges of use 90-260V 50/60Hz
3.Check the rated current of the power outlet and the power is in line with the use of the product range

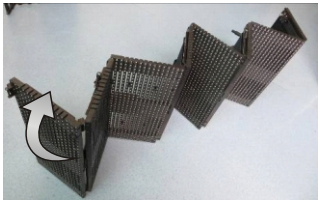
Folding Instructions

One of features of Rubik LED Display panel is can be folded into a cuboid by the size of 330cm x 160cm x170cm

Warnings! Please fold the led panel according to the following image, any damage shall be borne by the customer himself, Manufacturer will not bear any loss.
Warning! Don't fold the two LED display surface at the same angle, you must fix one module first, then turn round the other one.



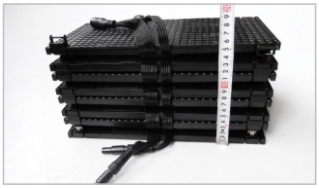
Two Folding Ways: LED Display Surface Outward and LED Display Surface Inward.As pictured above, we recommend the display surface inward to protect the LED display.

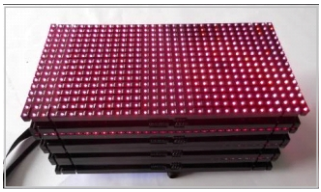


LED Display Surface Outward

LED Display Surface Inward

Folded:





Physical Installation

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WARNING! The Safety and suitability of lifting equipment, installation locations, anchoring method mounting hardware, suspending structure and electrical installation is responsibility of the installer.

WARNING! Installing must be carried out by qualified profession only, contact you Huasun supplier for assistance if you have any questions about how to install the product safely.

WARNING! A Maximum of three panels in total for Vertical installation (3.84m) and 1024 pcs panel for horizontal installation (327.68m).

Structure

Header Installation

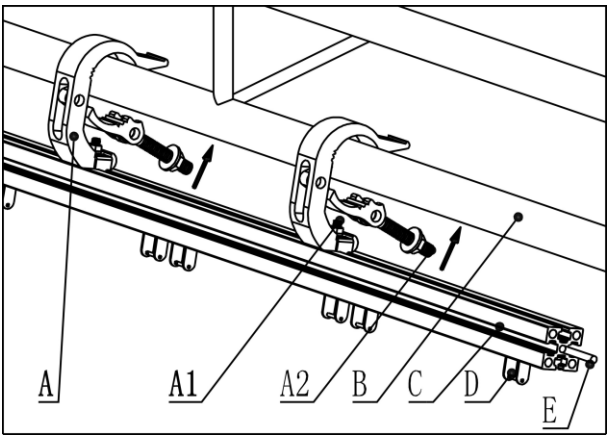


Figure-2

A: Rigging Clamps Can be used to attach a Header(C) to a Truss. One Header can fasten 2 rigging clamps (A).

A1: Fasten Rigging Clamps to Header, put through the screw bolt (A1) into Header(C) slot, and then tight the Clamps with screw.

A2: When hang the Rigging Clamps (A) on the Truss, put up the lock stud (A2) into the slot and lock tightly.

B: Truss (or similar supporting structure): can be used to hang the whole led display.

C: Header: used to fasten the Rigging Clamps to LED display Hook.

D: LED Display Hook: to attach LED Display with the Header(C), one Header can put through 8pcs hooks. The gap among each hook please check the image below:

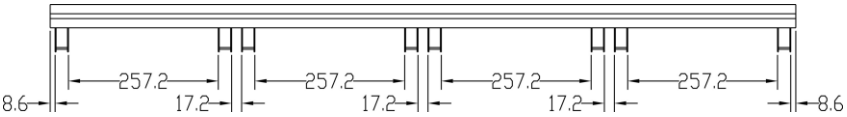


Figure-3

E: Header Connection Bracket: to connect the two adjacent Headers(C) to ensure they are on the same straight line. If they are not on the same straight line, you can adjust screw A1 to make them on the same line.

Panel Installation (Combination Installation)

Rubik series LED Panel installation must follow the principle of from up and down, then from left to right

Vertical Combination Installation:

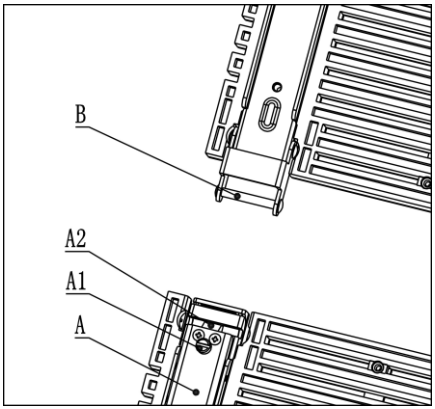
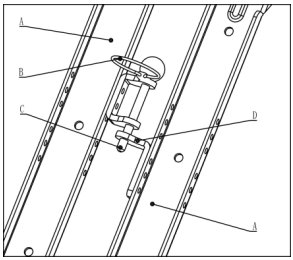


Figure-4

A: When install the panel, push down A1 until A2 is fully engaged in the socket.
A1: downward-Push installation devices
A2: Locking Handle: to stuck the latch on B
B: Put the B latch into A2 socket, then loose A1 till A2 rebounds to press B.
Install the other module in the same way.

Notes: Latch must be pressed by the Locking Handle to make A rebound; Make sure the power cables and the LED Panel must on the same side during the installation, rather than in the front of the LED screen (Display Image Screen).
Vertical attachment maximum of three panels in total

● Horizontal Combination Installation



A: Left Side LED Display Panel
B: When install the left panel, put your middle finger into the loop and then pull it up until there is a distance between C and D.
C: Locking Handle: to engage into the right side locking hook.
D: Right side with locking hooks to engage with C.
E: Right Side LED Panel

Figure-5

Notes: All the Locking Handles should be in the right side connection holes when the side-to-side attachment. In theory, maximum of 1021 modules in total for Horizontal attachment that is the length is 327.68m.

■ Data Processor Installation

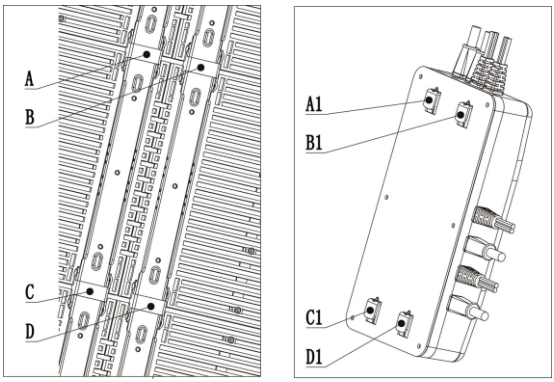


Figure-6

Data Processor must install on the second single module from the top of each two panels. See Figure 6, there must be a one-to-one correspondence between A,B,C,D on screen and A1,B1,C1, D1 on Data Processor. Each socket must joint into points correspond.

Note: the slot on Data Processor must be inserted into the hinge on the screen body. If it is not inserted, the data processor will not be fixed on the screen. It is not allowed. One data processor can control 4 pcs modules on horizontal (didn't include the vertical direction)

Electrical Part

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System Layout

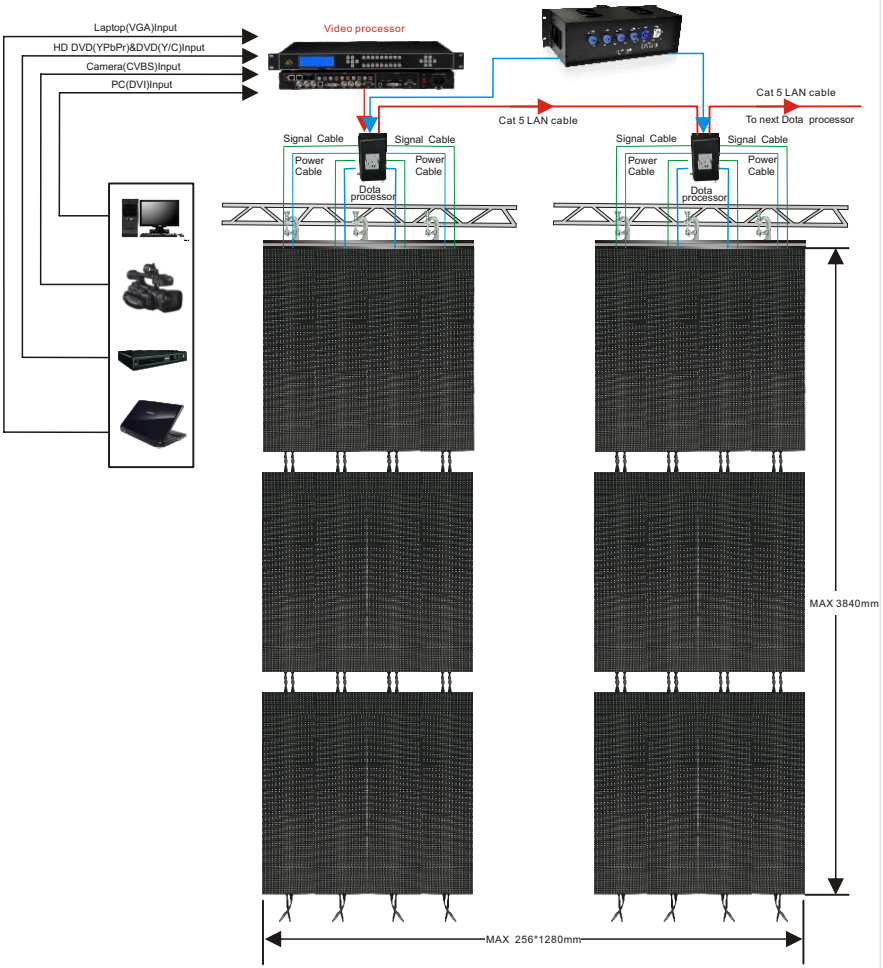


Figure-7

Rubik LED Display electrical connection is connector interconnection

Panel Interconnection

Panels are integral and engage automatically when panels are installed in columns.
Signal Cable Connection, (see figure 8), A input connector to D output connector, cable tail with 14P cable
Power Cable Connection,(see figure 8), B input connector to C output connector, cable tail with 4P cable

Notes: Use corresponding connector correctly, if the connectors can not be interconnected, please changes another one.
Don't power high voltage, the connectors work in low voltage.

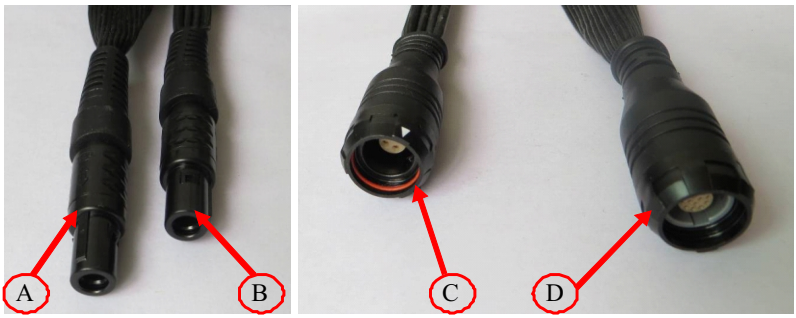


Figure-8

Panel and Data Processor Connection

Interconnect the top of Data Processor power connectors with the Panel power connectors.
Interconnect the top of Data Processor signal cable connectors with the Panel signal connectors.
（See Figure 5&6)

Note: Data Processor power output and signal output has four groups: 1,2,3,4, each group must be interconnected with the corresponding group 1, 2 3, 4 on the single panel.
No need to connect Data Processor power output and signal output, just need to connect group 1, group 2 or group 3.

Data Processor, Video Processor and Power System Connection

Data Processor connects with video processor with Cat 5 LAN cable. Two Cat 5 LAN cables on the Data Processor: signal input and signal output. Input Cat 5 cable connects with video processor LAN cable; Output Cat 5 cable connects with the next Data Processor signal output cable, and so on.

The Data Processor power input cable connects with the Power Systems by one DC output power extension cable, that with 1.5m,3m,5m and 10m for choice. You can put the Power System under the screen when choose more than 3m, but only can hang it on the Truss(or similar supporting) if choose 1.5m. The power extension cable DC output connects with Power Systems DC output, and DC input connects with Data Processor power input.

WARNING!

- Electrical connection is completed; you must check that all connections are correct and reliable before power.
- All electrical connections must be in operation in case there is no power operation.
- Power is turned on; you need to check the grounding eligibility.
- In the power supply must be preceded by a safety device.
- Power can not be rain shower or have water poured on top.
- Don't connect Rubik panel with Local AC power, only can connect with Power cable tail of Power/signal distributor
- Power systems can be in series no more than 4;
- Rubik panel working voltage is DC 24V, ensure connect with PDC-101 Power output cable tail
- Power system can connect to AC 90-132V or AC 180-264V 50/60Hz
- Local service voltage must conform to Power systems rated voltage and all power systems must be ground electrically.

Maintenance

WARNING!

Before carrying out all maintenance operations, must disconnect the power.
Maintenance must be performed by qualified persons.
Clean with alcohol, cannot use the water.

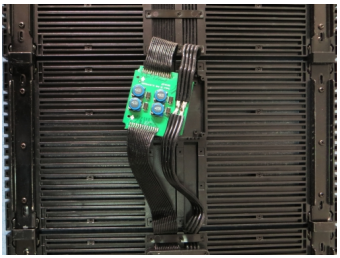
Clearing:

If too much dust, wipe the outside of LED modules by a soft cloth with alcohol. Replace new LED block if there is damaged LED blocks. Buy new led blocks from manufacturer.

Replacing an LED Block Steps:

1. Open the screws at the back of LED block

2.Loose the 6 screens on the sides of block



3. Take out the power panel and led block

4. Place a new LED block into positions on the Panels

Software Installation:

Please install according to software user manual

Troubleshooting

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Problem	Probable cause(s)	Remedy
Panel is completely dead	No power to panel.	Check power and connections.
	Fuse blown.	Disconnect panel from power. Contact Professional for service
	Defective PSU (power supply unit).	Contact manufacturer for service.
One or more panels displays video incorrectly or does not display video at all.	Incorrect panel settings on data processor System Controller	Check settings (display addresses, panel Device Properties, etc.)
	Fault on Data Processor link.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Panel defective.	Have faulty panel serviced by Manufacturer
	Other device (e.g. Ethernet switch)	Replace with a device known to be operating correctly. Have faulty device tested and serviced.
All panels and/or monitor screen display video incorrectly or do not display video at all.	Incorrect video input or panel settings on System Controller.	Check settings (PAL/SECAM/ NTSC selection, overall panel intensity setting, etc.)
	Unusable video signal or defective video source.	Check video source
	Fault on Data Processor link	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Device on Data Processor link defective.	Have faulty panel or device tested and serviced by Manufacturer
Display cuts out intermittently.	Panel is too hot.	Ensure free airflow around spine. Clean spine. Check that ambient temperature does not exceed max. Permitted level. Contact Manufacturer
	Fault on the Data Processor link.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Device on Data Processor link defective.	Have faulty panel or device tested and serviced by Huasun service technician or supplier.
One LED module cuts out.	LED module incorrectly installed and connected. LED module faulty	Contact Manufacturer